CLAIMS

What is claimed is:

1. A system for selecting spectrum comprising:

a licensed spectrum transceiver configured to communicate over licensed spectrum;

an unlicensed spectrum transceiver configured to communicate over unlicensed spectrum; and

a spectrum selector configured to select the licensed transceiver or the unlicensed transceiver for communication.

2. The system of claim 1 wherein the spectrum selector is configured to select the licensed transceiver or the unlicensed transceiver to transmit a communication.

3. The system of claim 2 wherein the spectrum selector is configured to select the other of the licensed transceiver or the unlicensed transceiver to transmit a second communication.

4. The system of claim 1 wherein the spectrum selector is configured to receive a communication from the licensed transceiver or the unlicensed transceiver.

5. The system of claim 4 wherein the spectrum selector is configured to receive another communication from the other of the licensed transceiver or the unlicensed transceiver.

6. The system of claim 1 wherein the spectrum selector is configured to transmit at least one communication to at least one member of a group comprising the unlicensed transceiver or the licensed transceiver.

7. The system of claim 6 wherein:

the spectrum selector is configured to transmit a first communication to the unlicensed transceiver and a second communication to the licensed transceiver;

the unlicensed transceiver is configured to transmit the first communication; and

the licensed transceiver is configured to transmit the second communication.

8. The system of claim 1 wherein the spectrum selector is configured to receive at least one communication from at least one member of a group comprising the unlicensed transceiver or the licensed transceiver.

9. The system of claim 8 wherein:

the unlicensed transceiver is configured to receive a first communication;

the licensed transceiver is configured to receive a second communication; and

the spectrum selector is configured to receive the first communication from the unlicensed transceiver and to receive the second communication from the licensed transceiver.

10. The system of claim 1 wherein the spectrum selector is configured to operate in a switching mode.

11. The system of claim 10 wherein the spectrum selector is configured to select a first spectrum for operation and to select a different spectrum for operation if an interference event occurs for the first spectrum.

12. The system of claim 10 wherein the spectrum selector is configured to transmit all communications for a first spectrum until an interference event occurs, and thereafter, to transmit at least a portion of communications for a second spectrum.

13. The system of claim 12 wherein the first spectrum comprises unlicensed spectrum, and the second spectrum comprises licensed spectrum.

14. The system of claim 10 wherein the spectrum selector is configured to select a first spectrum for transmission of at least one communication for a guaranteed service.

15. The system of claim 14 wherein the first spectrum comprises licensed spectrum.

16. The system of claim 14 wherein the spectrum selector is configured to select a second spectrum for transmission of at least one other communication for a best effort service.

17. The system of claim 16 wherein the second spectrum comprises unlicensed spectrum.

18. The system of claim 1 wherein the spectrum selector is configured to operate in a capacity mode.

19. The system of claim 18 wherein the spectrum selector is configured to select a first spectrum for operation and to select a different spectrum for operation if a capacity event occurs for the first spectrum.

20. The system of claim 18 wherein the spectrum selector is configured to transmit all communications for a first spectrum until a capacity event occurs, and thereafter, to transmit at least a portion of communications for a second spectrum.

21. The system of claim 20 wherein the first spectrum comprises unlicensed spectrum, and the second spectrum comprises licensed spectrum.

22. The system of claim 1 wherein the spectrum selector is configured to process a communication with an inverse multiplexing asynchronous transfer mode protocol.

23. The system of claim 1 wherein the spectrum selector is configured to process a communication with at least one member of a group comprising encryption, de-encryption, coding, decoding, modulation, and demodulation.

24. The system of claim 1 further comprising a base station within a range of which the spectrum selector exists.

25. The system of claim 1 further comprising an antenna configured to transmit a communication via a spectrum or receive the communication via the spectrum.

26. The system of claim 1 further comprising an access device configured to communicate with the spectrum selector.

27. The system of claim 26 further wherein the access device is configured to transmit, receive, or transmit and receive.

28. The system of claim 1 wherein the spectrum selector is configured to integrate a communication at a service level.

29. A system for selecting spectrum comprising:

a medium access control layer configured to control access for a communication to unlicensed spectrum or licensed spectrum; and

a differentiator configured to format the communication for communication over the unlicensed spectrum or the licensed spectrum.

30. The system of claim 29 wherein the medium access control layer is configured to direct a resource for the unlicensed spectrum or the licensed spectrum.

31. The system of claim 29 wherein the medium access control layer is configured to format the communication for a protocol.

32. The system of claim 31 wherein the protocol comprises inverse multiplex asynchronous transfer mode.

33. The system of claim 29 further comprising an aggregator configured to multiplex or demultiplex the communication.

34. The system of claim 29 further comprising a modulator configured to modulate or demodulate the communication.

35. The system of claim 29 wherein the differentiator is configured to format a first portion of the communication for transmission over a first spectrum and to format a second portion of the communication for transmission over a second spectrum.

36. The system of claim 29 wherein the differentiator is configured to format for combination a first communication and a second communication to a third communication.

37. The system of claim 29 wherein the differentiator is configured to generate the communication for point to point communication or point to multipoint communication.

38. The system of claim 29 wherein the medium access control layer is configured to predict spectrum need based on past performance.

39. The system of claim 29 further comprising a diversity applicator configured to apply a diversity technique to the communication.

40. The system of claim 29 further comprising a converter configured to upshift or downshift the communication.

41. A method for selecting spectrum comprising:

configuring a licensed spectrum transceiver to communicate over licensed spectrum;

configuring an unlicensed spectrum transceiver to communicate over unlicensed spectrum; and

configuring a spectrum selector to select the licensed transceiver or the unlicensed transceiver for communication.

42. The method of claim 41 further comprising selecting the licensed transceiver or the unlicensed transceiver to transmit a communication.

43. The method of claim 42 further comprising selecting the other of the licensed transceiver or the unlicensed transceiver to transmit a second communication.

44. The method of claim 41 further comprising receiving a communication from the licensed transceiver or the unlicensed transceiver.

45. The method of claim 44 further comprising receiving another communication from the other of the licensed transceiver or the unlicensed transceiver.

46. The method of claim 41 further comprising:

transmit from the spectrum selector a first communication to the unlicensed transceiver and a second communication to the licensed transceiver;

transmitting the first communication from the unlicensed transceiver; and

transmitting the second communication from the licensed transceiver.

47. The method of claim 41 further comprising:

receiving a first communication at the unlicensed transceiver;

receiving a second communication at the licensed transceiver; and

receiving the first communication from the unlicensed transceiver and receiving the second communication from the licensed transceiver, both at the spectrum selector.

48. The method of claim 41 further comprising operating the spectrum selector in a switching mode.

49. The method of claim 48 further comprising selecting a first spectrum for operation and selecting a different spectrum for operation if an interference event occurs for the first spectrum.

50. The method of claim 48 further comprising selecting a first spectrum for transmission of at least one communication for a guaranteed service.

51. The method of claim 50 further comprising selecting a second spectrum for transmission of at least one other communication for a best effort service.

52. The method of claim 41 further comprising operating the spectrum selector in a capacity mode.

53. The method of claim 52 further comprising selecting a first spectrum for operation and selecting a different spectrum for operation if a capacity event occurs for the first spectrum.

54. The method of claim 41 further comprising processing a communication with an inverse multiplexing asynchronous transfer mode protocol.

55. The method of claim 41 further comprising processing a communication with at least one member of a group comprising encryption, de-encryption, coding, decoding, modulation, and demodulation.

56. A method for selecting spectrum comprising:

configuring a licensed spectrum transceiver to communicate over licensed spectrum;

configuring an unlicensed spectrum transceiver to communicate over unlicensed spectrum;

configuring a spectrum selector to select the licensed transceiver for operation in a primary mode and to select the unlicensed transceiver for operation in a backup mode;

selecting operation for the backup mode when interference occurs for the primary mode; and

selecting operation for the primary mode when interference does not occur for the primary mode.